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ABSTRACT

This study is designed to compare the school normative climate of white and black urban elementary schools relatively matched on socioeconomic status (SES) and achievement. With this design the researcher sought to: (1) find if there are differences in normative climate between white and black schools; and (2) generate further tentative insight into variables which may affect the differential academic performance of students in white and black schools. A nonrandom sample of schools was selected through the aid of the Michigan Department of Education State Assessment Program. The department provided aggregate scores of all fourth-grade students, by school, on achievement and SES, as measured by a questionnaire of family consumption patterns, education, mobility, and student's future aspirations. Data were collected in 1970-71 via questionnaires from 16 schools with a total population of 2,743. The 1970-71 fifth-grade students whose achievement and SES data were collected by the State department in 1969-70 were the primary student sample in each school. An additional sample of fourth- and sixth-grade students in each school was included to obtain a wider range of student reports. Measures of school climate were sociopsychological scales and factors derived from the student questionnaire. (Author/JM)

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A COMPARATIVE STUDY OF SCHOOL CLIMATE IN WHITE AND BLACK ELEMENTARY SCHOOLS

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A COMPARATIVE STUDY OF SCHOOL CLIMATE IN WHITE AND BLACK ELEMENTARY SCHOOLS

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A central aspect of the education problem is the low rate of academic success among Puerto Ricans, American-Indians, Mexican Americans, and Blacks (Coleman, et al, 1966). Thus far, educational innovations such as compensatory education have not been successful. If history provides any clues, performance contracting, voucher systems, and other proposed innovations will fail as their predecessors did. Busing also is held in doubt as a possible education cureall (Armour, 1972). Alan Wilson (1969), in his study of race/social class, found that the social class mix of the school was more important than racial balance. Therefore, busing solely for desegregation may not improve education.

The lack of educational success among minorities, especially Blacks, has prompted numerous research endeavors. These efforts have sought generally, to explain the differences in academic performance between Whites and Blacks. Research has focused on individual variables, family, neighborhood, and somewhat on the school social environment (climate). Mainly, the research has centered on race and/or socioeconomic-status-related factors to account for the achievement differential between Blacks and Whites. The high degree of relationships between socioeconomic status and achievement is an area of considerable research activity (Sexton, 1961; Herriott and

St. John, 1966; Sewell and Shah, 1967; Jencks, 1968; Coleman, et al, 1966; and Mayeske, et al 1969). Schools with normal or high achievement are usually middle class or better, whereas schools with low achievement usually indicate low socioeconomic status. Due to economic inconsistencies within America, the greater proportion of Blacks are of low socioeconomic status, whereas the greater proportion of whites are middle class.

However, the socioeconomic status and achievement relationship does not always hold true. It is possible to find low SES Black schools with high achievement and high SES White schools with low achievement. Situations such as this have prompted researchers such as Halpin and Croft (1959), Coleman (1961 & 1966), Michael (1961), Wilson (1969), McDill, et al (1967), and Brookover, et al, (1973), to examine school climate.

SCHOOL CLIMATE

In this paper, the concept of school climate will be viewed from a symbolic interaction frame of reference. David Johnson (1970: 231), illustrates the theoretical roots of this concept succinctly, as utilized in this study:

> Education, from a social-psychological point of view, is carried on in an organized social environment largely through interpersonal processes. How a student responds in the classroom, for example, will depend upon such factors as the organizational structure and climate of the school, the nature of the student's goals and the goals of his teacher, and the reaction he thinks his peers, parents, and friends will have to his behavior. It is primarily within the extended teacher-student and student-student interaction in the classroom that education takes place.

To aid conceptualization of school climate as delineated, the following mental picture is suggested. The interaction of principal,

teachers, and students within the school produces an atmosphere that will enhance or reduce academic performance. Parents also provide input into the school in two ways. First, the most often discussed and empirically validated, is the parents' role as significant others of the student (Brookover, et al, 1967). Secondly, often alluded to in a tangential manner in research, but not studied specifically, is value consensus between the school and parents.[1] Basically, this discussion depicts the construct of school climate as a self-other phenomenon (symbolic interaction) in which the participants are all affecting and being affected by the other constituency. A school in which the parents, students, teachers, and principal are supportive of achievement will, possibly, have a climate which is conducive to optimal student performance.

PURPOSE

The relationship of school climate to achievement has been approached from several perspectives. Coleman (1961) found that academic achievement received varying amounts of reward or punishment in schools. Therefore, it is possible to have a school climate that supports achievement. Davis (1961), explained that school climate press for college attendance is contingent upon socioeconomic status in poorer school climates (greater proportion of lower class), whereas ability is the crucial factor in better school climate (greater proportion of middle class). Insights into possible climate differences between Black and White schools were indicated by Coleman (1966). Sense of control and self-concept were found to be significantly related to achievement. However, the manifestation

differed in that White and/or advantaged children's achievement, or lack of it, was related to self-concept, whereas Black and/or disadvantaged children's achievement was related to sense of control. The above results are especially meaningful in regard to Black-White school climate differential because Coleman also found that schools were for the most part racially segregated, which also indicates segregation by social class, which was most pronounced at the elementary level. Other research by Wilson (1969), and further analysis of the Coleman data seemingly indicate possibly different climate configurations in Black and White schools (Cohen et al., 1972). McDill, Meyers, and Rigsby identified social climate variables which accounted for most of the variance in achievement usually attributed to socioeconomic composition (McDill et al., 1967). Given the above cited literature indicating the possibility of school climate, racial differentials in school climate, and the possible effects beyond socioeconomic status, this study of school climate differences in elementary schools seems warranted, especially since research on elementary school climate is virtually non-existent (Johnson, 1970).

This study is designed to compare the school normative climate of White and Black urban elementary schools relatively matched on socioeconomic status and achievement.[2] With this design the researcher sought to: (1) find if there are differences in normative climate between White and Black schools; and (2) generate further tentative insight into variables which may affect the differential academic performance of students in White and Black schools.

METHODOLOGY

A non-random sample of schools was selected through the aid of the Michigan Department of Education State Assessment Program. The Department of Education provided aggregate scores of all fourth-grade students, by school, on achievement as measured by a composite achievement test, and SES, as measured by a questionnaire of family consumption patterns, education, mobility, and student's future aspirations/expectations.

The design of this research utilized several compromises which were necessary due to the realities of the Michigan elementary school population. These realities were as follows: (1) the small number of Black high-achieving schools in the population;[3] (2) little Black-White similarity in socioeconomic status and achievement levels; and (3) difficulty in receiving data collection permission (Henderson, 1974). Given the parameters of the population, data were collected in 1970-71 via questionnaires from a total of sixteen schools with N=2,743. Criteria for selection was on the basis of the previous year's (1969-70 school year) assessment information. The 1970-71 fifth-grade students whose achievement and SES data were collected by the State department in 1969-70, were the primary student sample in each school. An additional sample of fourth- and sixth-grade students in each school was included to obtain a wider range of student reports. [Table 1 about here]

High achievement level was defined by a score of 50-and-above, while scores lower than 50 were considered low achievement. Socio-economic status was classified in the same way but a score of 49

was the breaking point. Table 2 illustrates the classification of schools.

[Table 2 about here]

The comparability between White and Black schools was only relative at best. However, given the elementary school population in Michigan, this seemed to be one method to begin exploratory work in this area. Along with the absence of a rigorous design is the sacrifice of generalizability.

SCHOOL CLIMATE VARIABLES

Measures of school climate were social psychological scales and factors derived from the student questionnaire. The four factors are composed of most of the the same items which make up the ten scales. Rather than opt for scales or factors in this research, the decision was made to utilize both types of variables for the following reasons:

1. A major intent of this research was to examine the data in various ways;
2. The presentation of both scale and factor scores will perhaps suggest varied starting points in analysis of future research.

SCALES

The scales[4] used in this analysis were taken from related studies or a priori structured by the research team. These scales are as follows:

Reported student press for competition or individual performance. This construct is designed to measure the perceived press of students in regard to individual competition within the school setting.

Importance of student self-identity or role. This scale is designed to measure the "relative degree of investment placed in the identity student, for self esteem maintenance." (Gigliotti, 1969).

Academic norms of school. This refers to the demand for academic

performance, as reported by the students.

Sense of Control. Basically this scale measures the child's feeling of personal efficacy over his environment in relationship to his school performance. It is based upon the work of James Coleman, et al. (1966: 288) who describes it in the following manner:

> If a child feels that his environment is capricious, or beyond his ability to alter, then he may conclude that attempts to affect it are not worthwhile and stop trying.

Self-concept of academic ability. This is a scale designed to measure the "evaluating definitions which an individual holds for himself in respect to his ability to achieve in academic tasks in general, as compared with others in his school class" (Brookover, et al., 1967).

Perceived evaluations and expectations. These scales are designed to measure the perceived evaluations and expectations of best friends (peers), teachers, parents, and principals. The dimensions of evaluations and expectations are defined by Auer (1971: 53), and Brookover, et al. (1967: 60) respectively as follows:

> Perceived evaluation is defined as evaluating definitions which an individual perceives another person holds of him in respect to his ability in academic tasks in general as compared with others in his school class.
>
> Perceived expectation is defined as expectation which an individual perceives another person holds of him in respect to academic tasks as compared with others in his school class.

Reported teacher press for competition or individual performance. These items are designed to measure the teacher's press for competition or individual performance in school, as reported by students.

FACTORS

A varimax factor analysis[5] was applied to 63 attitudinal items from the student questionnaire, forming factors on the basis of the responses of students considered as individuals (Schneider, 1973). The four factors

which emerged from the student data were identified by Schneider (1973) as: (1) student perceptions of the present evaluations-expectations in their school social system; (2) student perceptions of the future evaluations-expectations in their school social system; (3) Student perceptions of feelings of futility permeating the social system of the school; and (4) student perceptions of thenorms stressing academic achievement in their school and social system.

Factor 1. Student Perceived Present Evaluations-Expectations. This factor contained items concerning the respondents' perceptions of the expectations-evaluations of "others" (parents, teachers, friends) and the students' "self-concept of academic ability" from the present through the completion of high school.

Factor 2. Student Perceived Future Evaluations-Expectations. This factor was the future-oriented counterpart of Factor 1. Basically it consisted of items concerning the students' perception of "others'" (parents, teacher, friends) assessment of future academic accomplishments. Another aspect of this factor involved the students' "self-concept of academic ability" and self-evaluation regarding college attendance and success.

Factor 3. Student Reported Sense of Futility. This factor contains the items which make up the "sense of control" questions used by Coleman (1966). Other items revolve around students' perception of teachers' and other students' feelings of hopelessness or indifference about academic achievement.

Factor 4. Student Perception of School Academic Norms. Items loading high on this factor concerned students' perceptions of pressure for academic achievement by members of school social system and school bureaucracy.

A particularly interesting aspect of this factor is the students' perceived nexus of the principal's evaluation-expectations and the general normative academic push in the school environment. More specifically, the principal is perceived as the most crucial "significant other" in the school climate. Other items involve the amount of student perceived competition-cooperation within the environment and the reported and perceived importance of the student role.

Analysis

Responses to each item of the respective scales were combined to form scale scores for each individual within a school. In those instances where all responses (within a scale item) or items within the scale were not in the same direction, linear transformations were performed to expedite analysis. School scale scores were obtained by calculating the mean of the student scale scores for each school. If a respondent omitted an item, the mean of the other items within the scale was substituted. If all items within a scale were omitted, the respondent was dropped. Factor scores were generated for each student. These students' factor scores were then utilized to produce school mean scores (Schneider, 1973).

Multivariate analysis of variance was employed to examine the climate variable difference between Black and White schools. Rationale for this technique was based on two aspects (McCall, 1970):

(1) multivariate procedures ask somewhat broader questions than univariate analysis and are more powerful;

(2) when several variables possessing psychological cohesiveness are examined, multivariate analysis is more appropriate than multiple univariate tests.

Small sample size, and consequently few degrees of freedom, prevented

the multivariate testing of all the mean school scale and factor scores in concert. Therefore, these three groups of variables were analyzed separately. [Table 3 about here]

The following rationale was used in assigning the variables to the three groups shown in Table 3:

(1) Self-concept of Academic Ability and the Perceived Expectations and Evaluations were grouped together due to the previous research illustrating the reciprocating effect of Perceived Expectations and Evaluations upon each other (Brookover, et al., 1965);

(2) the next group of variables was grouped together on a theoretical basis, because all seemed to yield either individual or group indices that may influence normative patterns. These individual or group measures, in turn, could perhaps facilitate a school normative climate that could affect achievement;

(3) this variable group contains the factors obtained from varimax analysis of the student questions.

Findings

The first step of the multivariate analysis reported in Tables 4 and 5 revealed the absence of interaction effects. [Tables 4 and 5 about here]

The absence of significant interaction allows testing for the main effect of race to be interpreted without accounting for possible confounding effects. An examination of Table 6 illustrates that the multivariate F-test is significant ($p \leq .05$) for all variable groups. [Table 6 about here]

Because of these significant differences between Black and White schools, univariate F ratios were examined to determine which contributed to the overall group multivariate significance. The results are reported in Tables 7, 8, and 9. [Tables 7, 8, and 9 about here]

An examination of the univariate F ratios on each of the dependent measures associated with the significant multivariate F ratios reveals the following scales as significant univariates: Reported Teacher Press for Competition, Perceived Peer and Teacher Expectations and Evaluations, and Self-concept of Academic Ability. The least square estimate of effects gave the direction and estimated magnitude of the dependent variable. An examination of the univariate F ratios on each of the dependent measures associated with the significant multivariate F ratios reveals the following factors as significant univariates: Student Perceived Present Evaluations-Expectations, and Student Reported Sense of Futility. [Table 10 about here]

Table 10 gives the least squares estimate of the univariates which were significant. It indicates that Black schools scored higher on all scales (Self-concept of Academic Ability, Perceived Peer Expectations and Evaluation, Reported Teacher Press for Competition, and Perceived Teacher Expectations and Evaluations) than White schools. Factors revealed White schools scored higher on Student Perceived Present Evaluations-Expectations than did Black schools and Black schools scored higher on Student Sense of Futility than did White schools.

DISCUSSION AND IMPLICATIONS

This analysis was an attempt to investigate whether social-psychological climate differs between White urban and Black urban elementary schools. This research provides a beginning in an area where little work has been done. For example, variables which are identified as being significantly different between Black and White schools can be investigated to see whether they have any connections to achievement differential between White and Black schools.

A variable which contributed heavily to the significant multivariate

test of Variable Group A is Teacher Press for Competition. Black schools scored highest on this scale, which may mean that students in Black schools perceive the teacher to emphasize competition among the students. Tenable suggestions concerning the relation of this to the achievement differential between White and Black schools are as follows:

(1) teachers in Black schools, due to school practices such as tracking (ability grouping), systematically "cream off and cool out" students. Instead of the normative pattern of the school expecting almost all students to succeed, only a "chosen few" are expected to succeed (Rist, 1970);

(2) when students are encouraged to engage in excessive competition rather than cooperative ventures, the interaction between them may be detrimental to a normative system conducive to maximal achievement for all students (Deutsch, 1949; Haines and McKeachie, 1967; and Julian and Perry, 1967).

A significant univariate result was also obtained for Self-Concept of Academic Ability. This variable was the most powerful contributor to the overall significant multivariate test of Variable Group B, with the Black schools scoring higher on this scale than White schools. This suggests that Self-Concept of Academic Ability of students in these Black elementary schools emerges in a relatively segregated Black reference group in which lower academic performance is the standard against which students assess their ability. Therefore this high self-concept may be inflated (Rosenberg and Simmons, 1971).

A significant variable in the univariate testing was Perceived Peer Expectations and Evaluations. Parsons (1959), Coleman (1961, 1966), Wilson (1969), and Kerckhoff (1972), all speak of the crucial role peers play in the school social systems. Peers can either facilitate or mitigate against school achievement. Since Black schools scored highest on this scale, a possible

implication is that the normative system of peers is very strong in Black schools, but perhaps does not support achievement.

The Perceived Teacher Expectations and Evaluations Scale was also significant in the univariate testing. Black schools scored highest on this scale which seeks to measure the self-fulfilling prophecy phenomenon in regard to achievement (Rosenthal and Jacobson, 1969). However, the supposed concomitant phenomenon of academic achievement is not present. A tenable implication from this perspective is that students in Black schools may, in fact, have such perceptions but the teachers may expect and/or evaluate student performance by standards which are lower than national or state norms.

A particularly enlightening phase of this analysis were the factors which contributed to the significant multivariate test of Variable Group C. White schools' factor scores were higher on Student Perceived Present Evaluations-Expectations and Black schools' factor scores were higher on Student Reported Sense of Futility. This may explain some of the usual achievement differential between White and Black schools.

1. When students in Black schools perceive that parents, teachers, and friends are assessing them lower and expect less of them than those attending White schools, performance is likely to follow expectations.

2. The higher mean factor score in Black schools on Student Reported Sense of Futility is noteworthy. One aspect of this factor is the student perceptions of their efficacy within the social system. Another aspect are teachers' and other students' feelings of hopelessness or lack of caring about academic achievement within the school social system.

An examination of these results highlights the possible importance of Student Reported Sense of Futility, and Student Perceived Present Evaluations-

Expectations and Student Reported Sense of Futility are significant predictors of achievement in all schools (Schneider, 1973). Further exploration into the school climate differences between Black and White schools and the possible relationship to the achievement gap between White and Black schools is warranted.

FOOTNOTES

[1] This question of value consensus (school-community nexus) will become more important as the crescendo in regards to community control continues. Basically, in the middle class districts where academic achievement is present, the values of the school and community are congruent usually on the means and almost always on the end product of the education process. However, in some Black and lower class White distircts, especially where achievement is not satisfactory or declining, the mean and/or the end product of the education process may be viewed quite differently by the community and the school.

[2] Relative is used to depict the disparity in achievement levels and socioeconomic status between Black and White elementary schools. How this problem was managed will be explained in the section on design.

[3] If strict classification is used, there are only two Black, high-achieveing schools. However, one Black school was classified as high-achieveing with a state assessment score of 49.6 (50 and above was considered high-achieving).

[4] The reliability of these scales was examined by Hoyt's analysis of variance procedures. This gives the percentage of variance in the distribution of pupil scale scores that may be regarded as true variance, and not due to the unreliability of the instrument (Hoyt, 1941). Listing of scale items and respective scale reliability are in Appendix A.

[5] The items within each factor and factor loading are presented in Appendix B.

Table 1

CHARACTERISTICS OF SCHOOLS SELECTED:
RACE, ACHIEVEMENT LEVEL, AND N

School	Race	SES	Achievement Level	N	Percent White
01	White	High - 55.1	High - 59.6	140	85
02	White	High - 55.2	Low - 48.1	173	100.0
03	White	High - 58.2	High - 54.4	224	100.0
04	White	High - 54.9	Low - 47.8	202	100.0
05	White	High - 50.1	High - 58.0	88	100.0
06	White	High - 49.4	Low - 43.6	67	97.7
07	White	Low - 43.2	High - 56.7	104	100.0
08	White	Low - 44.9	Low - 44.6	88	100.00
09	White	Low - 46.7	High - 55.1	151	95.1
10	White	Low - 46.8	Low - 43.7	81	95.1
11	Black	High- 61.3	High - 55.1	276	30.0
12	Black	High - 52.9	Low - 47.2	406	01.0
13[a]	Black	High - 50.0	High - 51.8	-	-
14	Black	High - 49.2	Low - 37.3	149	00.5
15[b]	Black	Low - 43.8	High - 47.2	-	-
16	Black	Low - 46.7	Low - 38.0	105	13.8
17	Black	Low - 47.0	High - 49.6	105	09.5
18	Black	Low - 46.7	Low - 39.6	384	05.3

[a] - Data collection permission was denied.

[b] - Dropped from analysis because of design restrictions

TABLE 2

CLASSIFICATION OF SCHOOLS
SELECTED FOR STUDY

Social Class and Racial Composition	Quality of School Performance: High Mean Level of Achievement	Quality of School Performance: Low Mean Level of Achievement
White[a] High SES	3	3
Black[a] High SES	1	2
White[a] Low SES	2	2
Black[a] Low SES	1	2

[a]=Predominant 70% or greater

TABLE 3

CLIMATE VARIABLE COMBINATIONS FOR MULTIVARIATE ANALYSIS

Variable Group A	Variable Group B	Variable Group C
Reported student press for competition	Perceived peer expectations and evaluations	Student perceived present evaluations-expectations
Importance of self-identity student	Perceived teacher expectations and evaluations	Student perceived schools academic norms
Academic norms	Perceived parent expectations and evaluations	Student reported sense of futility
Sense of control	Perceived principal expectations and evaluations	Student perceived future evaluations-expectations
Reported teacher press for competition	Self-concept of academic ability	

TABLE 4

THREE FACTOR INTERACTIONS OR SECOND-ORDER INTERACTIONS
(RACE X ACHIEVEMENT X SOCIOECONOMIC STATUS)

Variable group	Multivariate F value	Degrees of freedom	P less than
A	1.5514	5,4	
B	.4151	5,4	
C	1.2471	4,5	

* $P \leq .05$

** $P \leq .01$

TABLE 5

Two Factor Interactions or First-Order Interactions

Variable Group	Multivariate F Value	Degrees of Freedom	P less than
Achievement by SES Interaction			
Group A	.9614	5,4	
Group B	.8033	5,4	
Group C	.6967	4,5	
Race by Achievement Level Interaction			
Group A	1.2945	5,4	
Group B	1.0656	5,4	
Group C	.5365	4,5	
Race by Socioeconomic Status Interaction			
Group A	1.7856	5,4	
Group B	.5226	5,4	
Group C	.5574	4,5	

* $P < .05$

** $P < .01$

TABLE 6

RACE MAIN EFFECT
(DIFFERENCES BETWEEN WHITE AND BLACK SCHOOLS)

Variable group	Multivariate F value	Degrees of Freedom	F less than
A	26.7755	5,4	**
B	5.9188	5,4	*
C	18.7471	4,5	**

* $p \leq .05$
** $p \leq .01$

TABLE 7

UNIVARIATE F - RATIO FOR VARIABLE GROUP A
(DIFFERENCE BETWEEN WHITE AND BLACK SCHOOLS)

Variables	Between mean squared	Univariate F	P less than
Reported students press for competition	2.6481	.6962	
Importance of Self-identity student	19.5054	1.3815	
Academic norms	.7809	.0733	
Sense of control	84.5975	4.6653	
Reported Teacher press for competition	157.4478	30.9359	**

* $P \leq .05$

** $P \leq .01$

TABLE 8

UNIVARIATE F - RATIO FOR VARIABLE GROUP 3
(DIFFERENCE BETWEEN WHITE AND BLACK SCHOOLS)

Variables	Between mean squared	Univariate F	F less than
Perceived peer expectations and evaluations	24.5824	5.3084	*
Self-concept of academic ability	56.0087	19.6642	**
Perceived teacher expectations and evaluations	21.2713	5.7801	*
Perceived parent expectations and evaluations	13.1602	2.6905	
Perceived principal expectations and evaluations	5.3910	.3069	

*$p \leq .05$ ** $p \leq .01$

TABLE 9

UNIVARIATE F - RATIO FOR VARIABLE GROUP C
(DIFFERENCE BETWEEN WHITE AND BLACK SCHOOLS)

Variables	Between mean squared	Univariate F	P less than
Student perceived present evaluations-expectations	.6050	26.2662	**
Student Perceived school academic norms	.0481	2.0923	
Student reported sense of futility	1.6493	23.1865	**
Student perceived future evaluations-expectations	.0088	.1823	

* $P \leq .05$ ** $P \leq .01$

TABLE 10

VARIABLE MEANS OF RACE AND LEAST SQUARES
ESTIMATED EFFECTS OF SIGNIFICANT UNIVARIATES

Scales	White school scale means	Black school scale means	Estimated effects
Self-concept of academic ability	73.45	77.33	-4.01
Perceived peer expectations and evaluations	78.70	81.26	-3.17
Reported teacher press for competition	66.51	72.98	-5.95
Perceived teacher expectations and evaluations	80.36	82.75	-2.75
Factors	**White school factor score means**	**Black school factor score means**	**Estimated effects**
Student perceived present evaluations-expectations	.0682610	-.3333958	.381355
Student reported sense of futility	-.5139222	+.1497310	-.571806

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